

CAI
IA 71
- N 16



NAHANNI NATIONAL PARK RESERVE



Gouvernement
Publications
Parks
Canada



February, 1983

Management Planning Program

Newsletter Number 1



A MANAGEMENT PLAN FOR NAHANNI

Parks Canada is beginning a program to develop a Management Plan for Nahanni National Park Reserve. When completed, the Management Plan will guide the development, management and operation of Nahanni for a period of ten to fifteen years. You are invited to participate in the preparation of the Management Plan.

A variety of opportunities for you to actively participate in the preparation of the Plan will be available to you at each of the three key decision-making steps of the planning program. You are invited to express your views regarding the future of Nahanni at public meetings, drop-in centres and workshops. You are also invited to express your ideas and concerns by completing the postage-paid mail-back comment portions of this and future Nahanni Planning Program Newsletters and/or by submitting briefs and letters. Your comments and suggestions will help Parks Canada prepare



View of Virginia Falls.

Nahanni was set aside as a "reserve for a national park, subject to a settlement of any right, title or interest of the people of native origin" when the NATIONAL PARKS ACT was amended in 1974. The official proclamation of this action occurred on April 9, 1976. It is important to note that hunting, trapping and fishing activities by the native people of the Nahanni region will continue to be permitted within Nahanni National Park Reserve pending the legal settlement of native land claims in this area.

the best possible Management Plan for Nahanni.

This newsletter has been prepared to provide you with information about:

- Parks Canada's planning process for national parks and how you can participate in this process;
- the Park Purpose and Objectives Statement which has been prepared for Nahanni National Park Reserve;
- the National Parks Zoning System and its present application in Nahanni;
- Parks Canada's legislation and policies of direct applicability to Nahanni, summarized as proposed Planning Principles which will guide the Planning Team in preparing the Plan;
- a brief description of Nahanni's regional setting, natural resources, history, existing park development and use; and
- those issues identified by the Planning Team to date which will be addressed in Nahanni's Management Plan.

WHAT IS A MANAGEMENT PLAN?

A Park Management Plan is a policy-setting document by which Parks Canada administers the resources and uses of a particular national park or park reserve.

Each Management Plan is an expression of Parks Canada's policies for a national park within its regional context. It provides a definition of the purpose of the park and outlines the degree to which park resources must be protected as well as the opportunities that are available to "understand and enjoy the park. The Plan also provides a statement

of management objectives for the park and the means and strategies for achieving them, as well as guidelines for resource management, interpretation, visitor use and regional integration. The Management Plan is not an end in itself; it is only a framework which outlines management strategies and development projects. Subsequent management, implementation, research and detailed planning will then take place according to the Plan. All Management Plans are approved by the Minister responsible for Parks Canada. The Plan guides the

management and operation of a park for ten to fifteen years.

Parks Canada monitors the implementation of a Park Management Plan on a continuous basis. The plan is also subject to a formal review every five years. Any significant changes recommended as a result of such a review will require public consultation. Any change to the approved Management Plan requires approval by the Minister responsible for Parks Canada.

HOW IS A MANAGEMENT PLAN DEVELOPED?

A Management Plan for a national park or park reserve is developed according to a systematic process which consists of the following five steps:

1. preparation of the Park Purpose and Objectives Statement;
2. collection and analysis of information regarding the park's natural resources, previous and existing visitor use and park management practices, existing legislation and policies, and national and regional relationships affecting the park area and public use, in order to identify planning issues and to help formulate planning proposals (see Figure 1);
3. formulation of Management Plan Alternatives which address the planning issues in a manner consistent with the Park Purpose Statement and Park Management Objectives;
4. development of a draft Management Plan, and
5. approval of a final Management Plan.

The Park Purpose and Objectives Statement prepared in Step 1 may be expanded or refined to more accurately reflect the nature of the park once

the results of Step 2 are available. The results of each step in the planning process form the basis for the next step.

Public Participation is an essential part of this planning process. As illustrated in Figure 2, the Nahanni Management Planning Program provides opportunities for public participation at the three decision-making steps in the planning process:

1. Information Collection and Analysis and the Identification of Planning Issues
2. Review of Management Plan Alternatives formulated to resolve the Planning Issues
3. Review of the Draft Management Plan

Public participation provides the opportunity for individuals and groups of varying interests to express their opinions, to become aware of the variety of concerns involved in park management, and to become aware of and to consider the range of public opinion regarding Nahanni and national parks in general. This will enable all participants to develop a better understanding of the objectives of Parks Canada and should lead to the development of a more effective and meaningful Plan.

Figure 1 MANAGEMENT PLANNING FRAMEWORK



THE PARK PURPOSE AND OBJECTIVES STATEMENT FOR NAHANNI NATIONAL PARK RESERVE

Parks Canada's objective for the establishment and operation of national parks is:

"To protect for all time representative natural areas of Canadian significance in a system of National Parks and to encourage public understanding, appreciation and enjoyment of this natural heritage so as to leave it unimpaired for future generations."

Parks Canada Policy, page 38

The National Parks System is made up of twenty-nine parks or park reserves; each park provides representation of the natural history features of one of thirty-nine terrestrial "National Park Natural Regions" identified in Canada. A Park Purpose and Objectives Statement which describes how a particular national park contributes to the fulfillment of Parks Canada's mandate is prepared for each of the twenty-nine national parks.

The Park Purpose and Objectives Statement consists of a park description, a park purpose statement which provides general direction on the purpose of the park for protection, and public understanding, appreciation and enjoyment in its "Natural Region", as well as park objectives which define the park's long-term role for preservation and protection, appreciation, understanding and enjoyment of park resources, and its role in its surrounding region.

The Park Purpose and Objectives Statement for Nahanni National Park Reserve follows. It will serve as a basis for the specific Park Management Objectives and the Park Management Plan that will be formulated during this planning process.

Park Purpose and Objectives Statement

Nahanni National Park Reserve protects for all time a natural area of Canadian significance representative of the Mackenzie Mountains natural region. The park focuses on the South Nahanni and Flat Rivers which, by carving through a series of mountain ranges, have created some of the finest examples of river canyons in Canada and the world. Other landform features of major significance are several mineral hot springs, extensive cave systems and a spectacular karst terrain. The major vegetation zones in the park are northern boreal forest in the river valleys and alpine tundra at higher elevations. Several unique plant communities are represented around the hot springs, on Prairie Creek Fan and the Plateau areas. Particularly significant wildlife species are the peregrine falcon, golden eagle, trumpeter swan, gray wolf, grizzly bear, and Dall's sheep. Among the park's significant features that should be singled out for special attention are the Rabbitkettle, Hole-in-the-Wall, Wildmint and Kraus hot springs, the nesting habitats of trumpeter swans, the mineral deposits used by Dall's sheep, and Grotte Valerie, the solution cave with skeletons of over one hundred Dall's sheep which died thousands of years ago.

Nahanni National Park Reserve will encourage public understanding of the meaning and value of its heritage resources. Special features which may serve to interpret what the park represents are: (1) Virginia Falls, one of North America's great waterfalls, in both height and volume, (2) First Canyon where the South Nahanni River moves through steep walled gorges, (3) the "Split's", a good example of complex river braiding, (4) the solution caves of the karst topography including Grotte Valerie, (5) sand blowout features including hoodoo-like pillars, knobs and arches, (6) hot

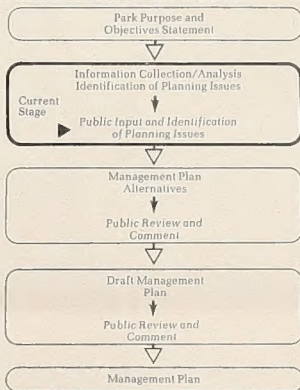
springs including Rabbitkettle Hot Springs where tufa deposits have created the largest mound of its kind in Canada, (7) pseudo-karst features such as the frost pockets of the First Canyon area and the piping sink holes of the Rabbitkettle and Yohin Lakes areas, and, (8) the South Nahanni and Flat River valleys with their excellent examples of glacial landforms such as hanging valleys and cirques. All of interest are the legendary exploits of gold seekers and other adventurers.

The park encourages appreciation and enjoyment of its wilderness, rugged environment and natural beauty. Visitors can experience the thrill of superb wild river touring on both the South Nahanni and Flat Rivers. This is the primary experience offered by the park. The overwhelming force and power of Virginia Falls is a spectacle of nature that is forever remembered by those who have seen it from the valley below. The visitor can be intrigued and fascinated by the beauty of Rabbitkettle Hot Springs, the cave systems and glacially sculptured landscape. Whether one stays in the canyons or hikes in the backcountry, the spectacular rugged scenery will kindle a greater appreciation and understanding of this northern wilderness.

The remote location of Nahanni means that recreation areas are not well developed in the region. The park reserve will provide a unique opportunity for visitors to enjoy a wild river experience in the Mackenzie Mountains.

Nahanni will provide members of the Fort Liard Band and neighbouring communities with opportunities to derive appropriate economic benefits. The park reserve will also develop co-operative programs with neighbouring land management agencies, including territorial parks, to ensure a complementary approach to the management and protection of natural and recreation resources in the region.

Figure 2 NAHANNI MANAGEMENT PLANNING AND PUBLIC PARTICIPATION PROGRAM



THE NATIONAL PARKS ZONING SYSTEM

Zoning is an important tool used for planning and managing national parks and as such is an integral part of a Management Plan. The National Parks Zoning System provides for the classification of the land and water areas of a national park according to their need for protection and their capability to support use. The National Parks Zoning System consists of five zones. The classifications range from Zone I - SPECIAL PRESERVATION, which permits minimal or no public use to Zone V - PARK SERVICES, which provides for centralized visitor services and park administration, with less emphasis upon resource preservation objectives. Only those zone classifications which best protect the natural resources of a national park and meet the park's needs for preservation and public use in particular are recommended and justified during the Management Planning Process. Therefore, not all zone classifications must be applied in all national parks.

The five zones are:

Zone I - SPECIAL PRESERVATION

This zoning designation is applied to specific areas or features which deserve special preservation because they have been preserved essentially unimpaired and because they contain or support unique, rare or endangered features, or the best examples of natural features characteristic of a specific natural region of Canada. Access and use will be strictly controlled or may be prohibited altogether. No motorized access or man-made facilities will be permitted.

Zone II - WILDERNESS

This zoning designation is applied to extensive areas which are good representations of each of the natural history themes of the park and which will be maintained in a wilderness state. Only certain activities requiring limited primitive visitor facilities appropriate to a wilderness experience will be allowed. Limits will be placed on numbers of users. No motorized access will be permitted. Management actions will ensure visitors are dispersed.



Do you feel these zone classifications and their extent are appropriate and should be incorporated in the Management Plan?

COMMENTS (please write your comments here).

Zone III - NATURAL ENVIRONMENT

This zoning designation is applied to areas which will be maintained as natural environments and which can sustain, with a minimum of impairment, a selected range of low-density outdoor recreation activities with a minimum of related facilities. Non-motorized access will be preferred. Access by public transit will be permitted. Controlled access by private vehicles will only be permitted where it has traditionally been allowed in the past.

Zone IV - OUTDOOR RECREATION

This zoning designation is applied to limited areas that can accommodate a broad range of educational and outdoor recreational opportunities and their associated facilities in ways that respect the natural landscape and that are safe and convenient. Motorized access will be permitted and may be separated from non-motorized access.

Zone V - PARK SERVICES

This zoning designation is applied to towns and visitor centres in certain existing national parks which contain a concentration of visitor services and support facilities as well as park administration facilities. Motorized access will be permitted.

In 1976, *Interim Management Guidelines* were prepared to provide direction for the operation and management of Nahanni National Park Reserve until a Management Plan was completed. The *Interim Management Guidelines* applied the following zoning classifications to Nahanni. These zones will be in effect until this park reserve's Management Plan is prepared and approved.

Zone I - SPECIAL PRESERVATION - includes the Sand Blowouts, Yohin Lake, Wildmint Hot Springs, Rabbitkettle Hot Springs, Hole-in-the-Wall Hot Springs, Grotte Valerie, the Deadmen Valley sheep licks, and ponds between Virginia Falls and Rabbitkettle Lake on which trumpeter swans nest. (see Map 1).

Zone II - WILDERNESS - all those areas of the park reserve not classified as Zone I or Zone IV.

Zone IV - OUTDOOR RECREATION - South Nahanni River between the east park boundary and Virginia Falls.

There are no Zone III - NATURAL ENVIRONMENT and Zone V - PARK SERVICES areas in Nahanni.

PLANNING PRINCIPLES

The Planning Team proposes the following draft "Planning Principles" to guide planning and management decisions during the Nahanni Management Planning Program. This set of guidelines was prepared through a thorough review of:

- The National Parks Act (1974) and Parks Canada Policy (1979);
- Nahanni's Park Purpose and Objectives Statement, and
- background information regarding Nahanni's natural resources, history, visitor use and its regional setting.

The Planning Principles provide a definition of Parks Canada's philosophy and mandate for Nahanni National Park Reserve in particular. Consequently, the Planning Principles define a range within which management planning decisions should be considered. The Draft Planning Principles are:

1. Wilderness is the essence of Nahanni National Park Reserve. Maintaining this river corridor wilderness* is the prime planning principle.
2. Only those land uses and activities compatible with this river corridor wilderness will be encouraged.
3. Parks Canada will encourage those visitor activities in Nahanni that require a minimum of support, essential primitive (if any) facilities, self-reliance on the part of visitors, and a low-density of use.
4. Nahanni National Park Reserve is a UNESCO World Heritage Site. The Management Plan must be compatible with Parks Canada's international obligations under the World Heritage Site convention.
5. Park operations and management will be consistent with the first planning principle.
6. Public access into Nahanni National Park Reserve will be managed to maintain the river corridor wilderness.

* River corridor wilderness, in the case of Nahanni National Park Reserve, implies an essentially unaltered, primitive and unpolluted river corridor which includes the areas bordering the rivers within the park reserve's boundaries.



Do you believe these draft Planning Principles provide the appropriate direction for the Nahanni Management Planning Program?

COMMENTS.

As a guide by which Parks Canada manages the resources and uses of a national park or park reserve, a Management Plan must address and resolve any outstanding and anticipated problems regarding resource management and visitor use. Fundamental questions regarding the level of resource protection and the level and type of visitor use which would be acceptable to the public and which would be compatible with Parks Canada's mandate and the Park Purpose and Objectives Statement must be resolved.

A brief description of each issue follows. These descriptions are accompanied by a number of questions in order to highlight the problem, and a space in which you are encouraged to write your comments. Please write your comments in the spaces provided, then detach and send us the mail-

This first stage of the Public Participation Program, "Information Exchange and Collection", is the foundation for all remaining steps and decisions in the planning process. Your responses to the following issues will be used to prepare a number of Plan Alternatives for Nahanni. The Plan Alternatives will propose different ways by which Parks Canada may manage the resources and uses of Nahanni. Your participation now is essential to the future management of this National Park Reserve.

How should Parks Canada's objectives for Natural Resource Management be met in Nahanni?



Wildfire

Fish catch limits are generally set on the basis of an assessment of fish productivity, habitat availability, the percentage of visitors per year who fish, the fish catch by anglers in previous years and the number of visitors/year expected in the future. An ongoing assessment of the productivity of naturally regenerating native fish species of the South Nahanni River is required in order to determine the capability of this resource to sustain sportfishing. Parks Canada will consider the restriction of sportfishing if studies indicate a decreasing fish population.

Although Parks Canada has a mandate to protect and manage wildlife found in Nahanni, its jurisdiction to do so is limited to a species' range within the park reserve's boundaries. The seasonal ranges of important wildlife species such as Dall's sheep, caribou and moose, which are found in the Nahanni-Mackenzie Mountain natural region, are located in areas adjacent to Nahanni. Wildlife management in Nahanni therefore, is presently confined to the preservation of wildlife species and their habitats within the park reserve. The resolution of wildlife/visitor use conflicts, such as bear/human interaction and the effects of human activities on riparian and river corridors and in the backcountry areas have been the primary wildlife management concerns.

The remaining areas of Nahanni, as well as the areas adjacent to Nahanni, are designated as an observation zone. Fires originating in these areas will not be suppressed unless they threaten life or property.



COMMENTS (please write your comments here)

[illegible]

COMMENTS

[illegible]

COMMENTS

[illegible]

RESOURCE PROTECTION — SPECIAL PRESERVATION AREAS

Parks Canada Policy regarding Resource Protection states: "Natural resources within national parks will be given the highest degree of protection to ensure the perpetuation of a natural environment essentially unaltered by human activity." (page 4)

The Zone I classification of the National Parks Zoning System is applied to specific areas or features of a national park or park reserve which deserve special preservation because they contain or support unique, rare or endangered features, significant cultural resources or the best example of natural features represented by that national park. The primary park management objective of the Zone I designation is preservation of park resources. No motorized access or man-made facilities will be permitted. Access and use may be prohibited entirely or may be permitted with strict controls.

The need to preserve a number of specific areas and features of Nahanni National Park Reserve was recognized by park administrators in the past. The Interim Management Guidelines for Nahanni, prepared in 1976, designated the Sand Blowsouts,



Dull 7 Sheep skeleton, Grotte Valérie

Yohin Lake, Wildmint Hot Springs, Grotte Valérie, Deadmen Valley sheep licks and the ponds between Virginia Falls and Rabbitkettle Lake on which trumpeter swans nest as Zone I - Special Preservation areas (see map 1). These areas have and will continue to be managed in accordance with the preservation objectives of the Zone I classification until the Management Plan for Nahanni is completed.



Sand Blowsouts

NAHANNI NATIONAL PARK RESERVE BOUNDARY

Lands for the establishment of Nahanni National Park Reserve were withdrawn and set aside for use as a national park by Order-in-Council on February 22, 1972. On April 9, 1976, Nahanni was officially proclaimed as a "reserve for a national park, subject to a settlement of any right, title or interest of the people of native origin". The purpose of this park in the National Parks System is to protect for all time a representative natural area of Canadian significance in the "Mackenzie Mountains Natural Region".

The present boundaries of Nahanni were originally selected in order to establish a wild river national park, and were identified under the assumption that they could be altered once extensive research of this area and its surrounding region had been undertaken. At that time, it was believed these studies would identify areas adjacent to the present boundaries which, if added to the park, would provide a greater representation of the characteristic features of the "Mackenzie Mountain" region and would result in the inclusion of a majority of the wildlife habitat areas important to the wildlife species found within Nahanni.

Research completed to date has identified areas adjacent to Nahanni that would add natural history features characteristic of the "Mackenzie Mountains" poorly represented at present. Extension of park boundaries to include these areas would also result in the inclusion of the seasonal range of a number of wildlife species. The inclusion of these habitat areas would enable Parks Canada to truly fulfill its mandate to protect and manage Nahanni's wildlife species. The areas identified for potential inclusion in Nahanni's boundaries are: the Ragged Range near Glacier Lake, the tundra area of the Thlogetho Plateau south of Deadmen Valley and the Karsi area north of the first canyon.

The above research findings and the current difficulties in providing adequate protection for Nahanni's wildlife species, given the park's present land base and increasing pressures for resource development and recreation in the surrounding region, have suggested the need to consider possible adjustments to Nahanni's boundaries.



Should any or all of those areas and features of Nahanni currently designated as Zone I be designated as Zone I - SPECIAL PRESERVATION in the Management Plan?

What other areas and features of Nahanni, if any, should be designated as Zone I?

Should controlled public access to and use in Zone I areas be permitted? If so, in which areas and under what conditions? What precautions would be necessary to protect the resource and the visitor?

COMMENTS:

What changes to the present park boundary, if any, would you propose?

COMMENTS:

Parks Canada Policy regarding visitor use states: "Parks Canada will provide those outdoor recreation opportunities which are a means for park visitors to enjoy and understand a park's natural environment and which are consistent with the protection of park resources." page 43.

The Park Purpose and Objectives Statement for Nahanni states that *the primary visitor experience offered in Nahanni will be "superb wild river touring" on the South Nahanni and Flat rivers and that "the park encourages appreciation and enjoyment of its wilderness, rugged environment and natural beauty"*.

A black and white photograph of a young boy fishing from a small boat on a river. He is holding a large, curved fishing rod. The background is filled with dense trees and foliage.

Virginia Falls is the only area in Nahanni which experiences significant levels of day-use visitation. In order to provide day-use access to this site, aircraft landings are permitted in an area immediately above Virginia Falls.



jetboating



Virginia Falls campground



Given the wilderness character and protection objectives of Nahanni, what kind and level of visitor use is appropriate on the South Nahanni and Flat rivers?

COMMENTS (please write your comments here)

This image shows a single sheet of cream-colored paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Should the number of visitors on the river at any one time be limited? If so, in which instances and how? Should the size of individual visitor groups be controlled?

COMMENTS

[illegible]

Should Parks Canada provide opportunities for the visitor to experience the rugged wilderness environment of the off-river areas of Nahanni?

COMMENTS

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slightly textured appearance and is set against a dark background.



Tour of Rabbikettle Hot Springs.

ACCESS

Access to Nahanni is limited. There are no roads to the park reserve; access is gained by air or water. Aircraft access is currently the most popular and practical way to reach Nahanni. Aircraft charter from Fort Simpson or Watson Lake to Rabbikettle Lake has been the primary mode of access to Nahanni. At present, aircraft landings are permitted at Rabbikettle Lake, Virginia Falls and with special permission from the Superintendent, at Deadmen Valley, Virginia Falls is the only location at which aircraft access for day-use is permitted.



Aircraft use within Nahanni is controlled by the Superintendent in accordance with the National Parks General Regulations.

Although motorized boat access to Nahanni is not as common as aircraft access, it is an important means by which visitors can reach Nahanni. Motorized boat access generally originates from Nahanni Butte. This type of river travel is only permitted on the lower reach of the South Nahanni River below Virginia Falls.



View of First Canyon.

GUIDING AND OUTFITTING

Commercial guiding and outfitting operations are currently permitted to operate in Nahanni. These operations permit people, who otherwise might be unable to do so, to visit and experience Nahanni. Such operations are managed according to the policies established in Nahanni's *Interim Management Guidelines*. The group camping areas at Dry Canyon Creek in Deadmen Valley, and at the Flat River confluence are maintained for use by the commercial guiding and outfitting operator who provides motorized watercraft (jetboat) tours in Nahanni.

The two commercial non-motorized outfitting operations, which provide rafting and canoeing tours on the South Nahanni River, and the jetboat outfitter who provides access to Virginia Falls from Nahanni's eastern boundary, accounted for twenty percent of the visitors to Nahanni in 1981. The jetboat outfitter did not operate in the 1982 visitor season.



Rafting tour.



Outfitter's camp.



a) Air Access

What should be the role of aircraft in providing access to Nahanni?

Is the use of aircraft to provide visitor access to Nahanni compatible with the wilderness character and the protection and visitor use objectives of Nahanni?

If so, what type of aircraft use is appropriate? For example, is the use of aircraft to provide access for day-use appropriate? Would the use of aircraft to provide overflight sightseeing be appropriate?

Should aircraft be permitted to land in the park reserve? If so, under what circumstances?

Should fuel caches be permitted in the park reserve?

COMMENTS:

b) Motorized Boat Access - Water Access

Is the use of motorized watercraft compatible with the objectives of Nahanni? If so, what type of motorized watercraft is appropriate and to which areas of Nahanni should such access be permitted?

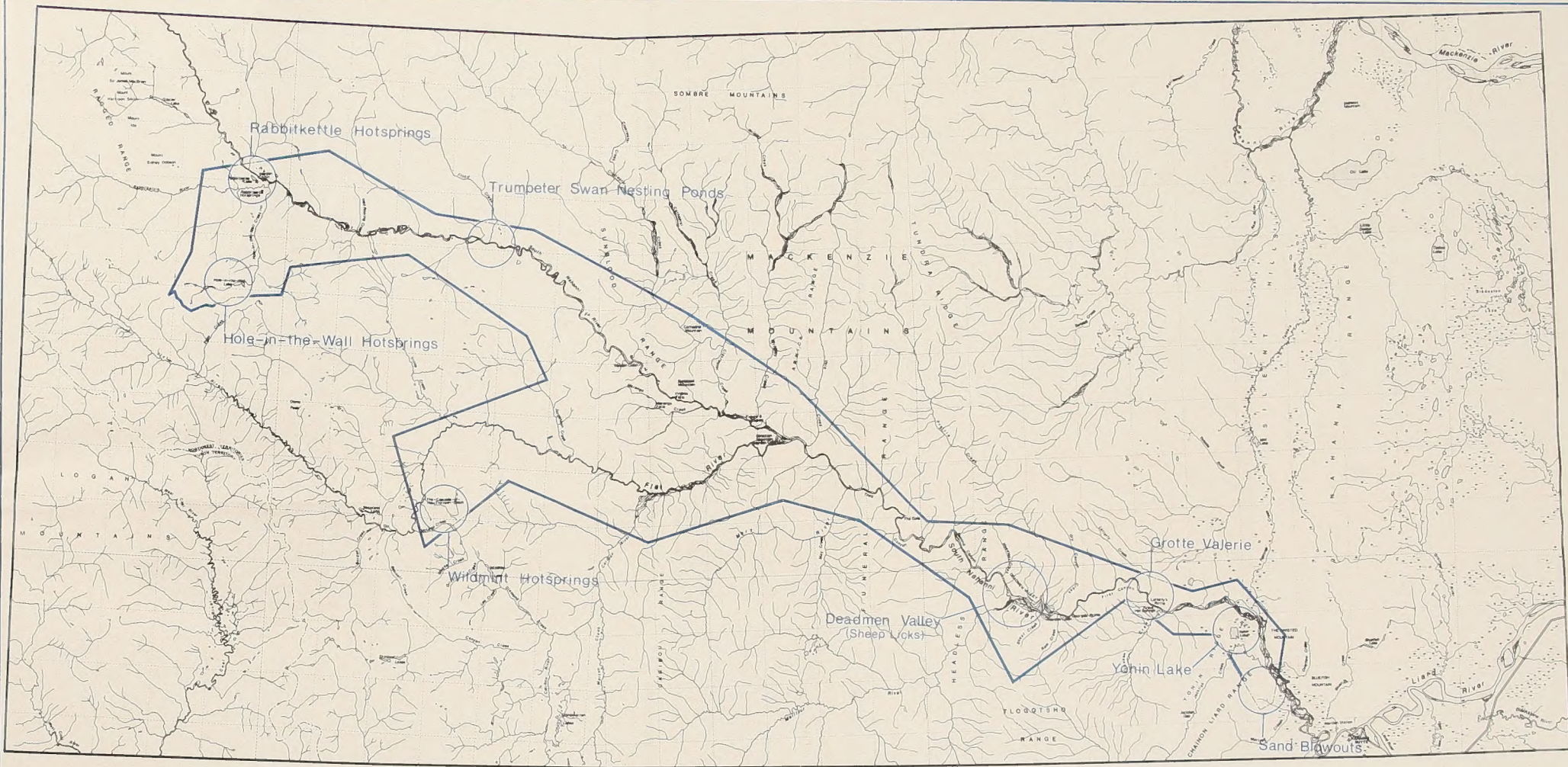
COMMENTS:

What should be the role of the guide and/or outfitting operator in providing visitor access and use opportunities in Nahanni?

Is guiding and outfitting compatible with the wilderness character and the protection and use objectives of Nahanni? If so, what type of guiding and/or outfitting operations would be most appropriate: motorized, non-motorized or both? What level of visitor facilities and services, if any, should be provided in Nahanni to support this use?

COMMENTS:

2



Rabbitkettle Lake.



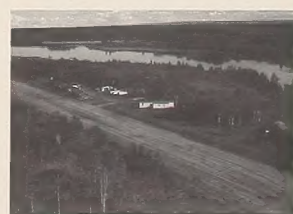
Camping at Rabbitkettle Lake.



The Grotto.



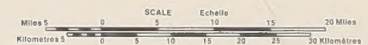
Flogotsho Plateau.



Warden Station at Nahanni Butte.

MAP 1 NAHANNI NATIONAL PARK RESERVE

LEGEND	LEGENDE
RIVER AND STREAM	RIVIERE ET RUISSEAU
INTERMITTENT STREAM	COURS D'EAU INTERMITTENT
SAND, GRAVEL OR MUD	SABLE, GRAVIER OU BOUE
LAKE	LAC
SWAMP	MARAIS
ROAD	CHEMIN
AIRPORT	AEROPORT
PARK BOUNDARY	FRONTIERES DU PARC
SPECIAL PRESERVATION AREAS	REGIONS DE PRESERVATION SPECIALE



AN OVERVIEW OF NAHANNI NATIONAL PARK RESERVE

REGIONAL SETTING

Nahanni National Park Reserve is a 4,766 km² wilderness area of striking and varied landscapes located in the southwestern corner of the Northwest Territories. The park reserve includes a 300 km section of the South Nahanni River extending from Rabbitkettle Lake to Overflow Creek, approximately 33 km upstream of the small community of Nahanni Butte. It also includes the lower 128 km of the South Nahanni River's tributary, the Flat River (see Maps 1 and 2). In 1978, Nahanni National Park Reserve was declared a World Heritage Site under the UNESCO World Heritage Convention. Both the South Nahanni and Flat rivers provide superb opportunities for wild river touring.

The South Nahanni and Flat rivers originate in the glaciers and snowfields of the Selwyn Mountains, 200 km to the northwest of Nahanni's western boundary. The first 118 km of the South Nahanni River included within the park, from Rabbitkettle Lake to Virginia Falls, meanders slowly across a broad valley bottom. At Virginia Falls, the river plunges 90m into the first of four canyons which are up to 1,200m deep. The canyons found in the 116 km section from the falls to Kraus Hot Springs are some of the most spectacular in Canada. Downstream of Kraus Hot Springs, the South Nahanni river flows into numerous branching channels known as the Splits and passes between

the outlying Nahanni and Liard mountain ranges. It flows into the Liard River at the community of Nahanni Butte. The Liard River joins the Mackenzie River at Fort Simpson. The Flat River flows into the South Nahanni River 30 km downstream of Virginia Falls.

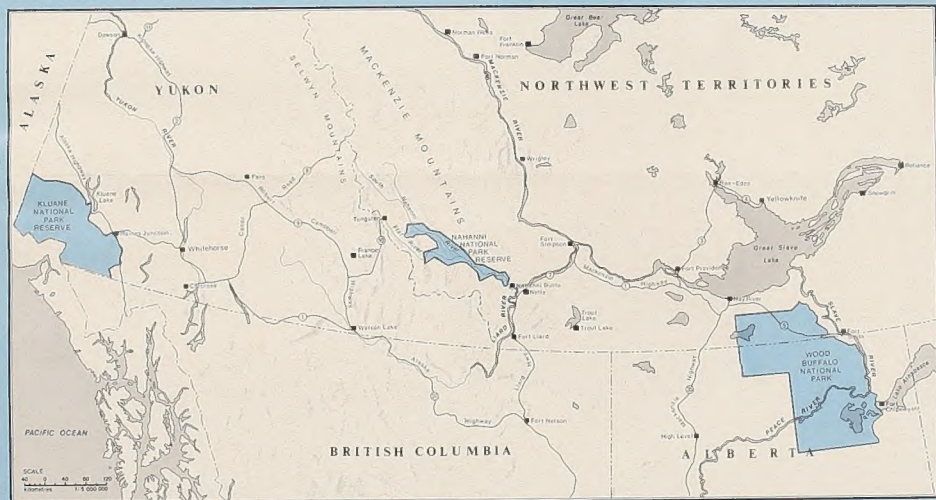
As illustrated in Map 2, public highways and all-weather roads in the vicinity of Nahanni National Park Reserve are limited. With the exception of the Liard Highway which, once completed, will provide road access from Fort Nelson to the Mackenzie Highway just south of Fort Simpson, road development which does occur in the region is in support of non-renewable resource development such as mineral exploitation and exploration and oil and gas exploration. In addition, few communities exist in the immediate region surrounding Nahanni. The community of Tungsten located at the headwaters of the Flat River, is the largest with a population of six hundred people. The community of Nahanni Butte, located at the junction of the South Nahanni and Liard rivers has a population of eighty people. Most members of this community are Slavey Indians who belong to the Fort Liard Band and follow a traditional lifestyle based upon a hunting and trapping economy.

Nahanni National Park Reserve is only accessible by boat or aircraft. The primary entry point for

most visits to Nahanni is Rabbitkettle Lake. Air charter service to Rabbitkettle Lake is available in Fort Simpson, Northwest Territories, 308 km to the east, and in Watson Lake, Yukon Territory, 224 km to the southwest. The Mackenzie Highway provides road access to Fort Simpson. Road access to Watson Lake is available via the Alaska Highway. Scheduled air service to both of these centres is also available. Aircraft charter to the Moose Ponds and Broken Skull areas outside of the park to gain access to the upper sections of the South Nahanni River, to Seaplane Lake to gain access to the Flat River, and to Nahanni Butte to gain access to the park via motorized boat are also common ways to reach Nahanni.

Access to the South Nahanni watershed without the use of chartered aircraft is possible by three overland and river routes. The first is to follow the Little Nahanni River near Tungsten directly to its confluence with the South Nahanni River. The second is to descend the Flat River from Tungsten. The third route requires the descent of the Macmillan River from its crossing with the Canol to the ascent of the Witham, Peter, and Willow Creek chain and a portage over the Ross River drainage into the Moose Ponds and the South Nahanni drainage system. A period of one to two weeks would be required to reach the park reserve via any one of these routes.

MAP 2 REGIONAL SETTING OF NAHANNI NATIONAL PARK RESERVE



VISITOR USE

In comparison to southern national parks, visitation to Nahanni has been relatively low since its establishment as a national park reserve in 1972 (see Table 1). This situation can be attributed to Nahanni's relative inaccessibility, the high cost of access and the unique experience - wild river touring, which is offered by this park reserve. The low levels of visitor numbers at Nahanni have, however, contributed to maintenance of its wilderness character and mystique.

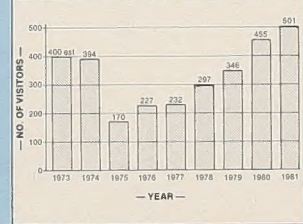
All visitors to Nahanni National Park Reserve are required to register-in at the Park Administration Office in Fort Simpson, the warden station at Nahanni Butte or the warden station at Rabbitkettle Lake, and upon completion of their trip, to register-out at the park office at Nahanni Butte or Fort Simpson.

The length of stay by visitors to Nahanni varies from a few hours by those visitors who fly to Virginia Falls, or motorboat to Virginia Falls or the

Kraus Hot Springs, to five to twenty-one days or more by those visitors who travel down the Flat or South Nahanni rivers. In 1981, the average stay was ten days and the average group size was six persons. Day use at Virginia Falls accounted for ten percent of the total visitation in 1981. Day use at Kraus Hot Springs accounted for five percent of Nahanni's visitation in 1981. Commercial outfitters and guide development tours have accounted for an increasing proportion of Nahanni's total visitation. In 1981, twenty percent of visitors to Nahanni used commercial outfitting and guide services.

Off-river hiking trips are becoming a popular activity by those visitors who tour down the Flat and South Nahanni rivers. The most common routes are an 8 km hike up Sunblood Mountain and a 4 km hike to Marengo Falls from Virginia Falls, as well as a hike up Prairie Creek or Dry Canyon Creek from Deadman Valley.

TABLE 1: NAHANNI VISITATION DATA 1973-81.



NATURAL HISTORY

Geology

The geologic history of the park reserve may be summarized as follows: during the Paleozoic Era, which occurred between 500 and 300 million years ago, sedimentary material was deposited into an inland sea which covered the area now characterized by the Mackenzie Mountains. Beds of sandstone, shale and limestone up to 6,000m in depth were formed as a result. In the Mesozoic Era, which occurred between 300 and 70 million years ago, pressures originating along the edge of the Pacific Crustal Plate released mountain building forces (tectonic activity) that deformed this floating sedimentary formation. The Mackenzie Mountains were formed as a result. A series of intrusions of igneous rock (batolithic intrusions) associated with this tectonic activity resulted in the formation of the Ragged and Selwyn mountain ranges. Renewed up-lifting occurred early in the Cenozoic Era (70 million years ago to the present). This activity increased the relief of these mountains and created the anticlinal (upfolds) and synclinal (downfolds) features found in the eastern portions of the park reserve. Some residual uplift and deformation may be continuing at the eastern end of the park during this present epoch. Recent geologic history is dominated by very continental erosion with short episodes of glacial action interspersed with longer periods of river erosion. The glacial action diverted western rivers eastwards so that the South Nahanni and other larger rivers to the north now drain east across the grain of the land. Because it follows the river, the park reserve provides a good west-east sample of all the geology of the southern Mackenzie Mountains.

As a result of the geologic history of the area three distinct bedrock regions can be easily identified in Nahanni National Park Reserve. At the western extremity the highest and most rugged mountains of the park reserve were formed by the erosion resistant igneous rocks. From Hole-in-the-Wall Creek to the east end of Third Canyon the rocks are rather weak Lower Paleozoic sediments. From Headless Range to the eastern park boundary the rocks are more massive and represent Upper Paleozoic sediments.

Vegetation

Nahanni lies in the extreme southern portion of the Mackenzie Mountains. Its forest cover is dominated by white and black spruce, and includes areas with mixtures of spruce, poplar and white birch as well as black spruce and lamarack bogs. The transition of vegetation from a closed boreal forest of poplars/white birch/spruce in the broad

lowland valleys to alpine tundra, with increasing altitude, is evident in Nahanni. Its forest cover therefore is classified as the Alpine Forest-Tundra type of the Boreal Forest Region of Canada. The evidence of wildfires in the park area is common. Wildfires are a normal and cyclic component of the boreal forest. Few areas, other than those protected by natural fire breaks such as the South Nahanni and Flat rivers are safe from wildfires in Nahanni.

Although the vegetation of the Mackenzie Mountains is rich and varied, the richness and diversity of vegetation in Nahanni National Park Reserve is unique. Reasons for its unique diversity of vegetation includes the fact that, as a result of its linear nature, the park transects approximately 225 km of the Mackenzie Mountains from an area of high elevation and low precipitation to their eastern limit, an area of low elevation and low precipitation. The resulting major differences in local climate and weather systems, geology and glacial history have resulted in a number of different habitats. In addition, the presence of highly specialized habitats such as wet limestone surfaces, mist zones at waterfalls, hot and cold mineral springs, unglaciated terrain, and areas of discontinuous permafrost have also contributed significantly to the number of vegetation species which exist in Nahanni.

Wildlife

Nahanni National Park Reserve supports a variety of wildlife species. Thirty-one mammalian species, 120 bird species and two amphibian species have been recorded in the park reserve. Opportunities to observe moose, beaver and black bears are common. Dall's sheep are found in some of the alpine tundra areas of Nahanni and woodland caribou can be found in the upper sections of both the Flat and South Nahanni river valleys. Thirty bird species which are of particular significance are the peregrine falcon, golden eagle and trumpeter swan.

Hydrology

The drainage basin of the South Nahanni River has a total area of 34,777 km². Although only a portion of the South Nahanni's tributaries are encompassed by Nahanni National Park Reserve, their cumulative effect is to greatly increase its flow volume within the park reserve's boundaries. For example, the South Nahanni's mean annual flow (measured in cubic metres per second) at Kraus Hot Springs, 141 kms downstream of Virginia Falls

is one hundred and ninety-five percent greater than that at Virginia Falls. The increase in the flow volume is largely the result of the entry of the Flat River, which drains an area of 8,500 km², 30 km downstream of Virginia Falls.

During May, flow volumes increase by as much as 900 percent from April as snow accumulations in the valley bottom melt and enter the Flat and South Nahanni rivers. The mean daily discharge of the South Nahanni River will usually increase until the middle of the month and then drop in late May as the low altitude snowmelt is completed. A rapid increase in discharge occurs in June, with both the Flat and South Nahanni rivers peaking during the last three weeks in June. It is not uncommon, however, for the South Nahanni River to remain high or moderately high until late August. During normal June peak periods, large daily variations in water levels are present as the high altitude snowmelt rate responds to changes in temperature, the daily length and intensity of the sun's radiation, and precipitation. Mean July flow levels drop by approximately thirty to thirty-five percent as the high altitude snowmelt is completed. Similar decreases in the mean flow levels also occur in August. In July and August, hot summer weather will result in increased glacial melting and consequently in a daily cycle of increased water volumes in glacially-fed streams entering the south Nahanni and Flat rivers. In September and October, flow volumes continue to diminish. However, prolonged and intense precipitation in this period can also result in large and sudden fluctuations. Flow levels in the winter (October to April) are very low.

The Flat and South Nahanni river drainage basins are characterized by rapid run-off and a quick response to water input. In the upper reaches of these rivers, sudden fluctuations in water levels of up to one metre may occur within a matter of hours, during periods of heavy precipitation. In the lower reaches, however, a lag period of up to 48 hours prior to increased water levels will normally follow the onset of precipitation.

Although there are great variations in the peak flows from year to year, the patterns of peak flow periods and their magnitude as well as the characteristic of sudden flooding of tributary streams following intense precipitation are important to recreational paddlers in Nahanni. Flow volumes dictate the difficulty of navigating individual rapids and that of the South Nahanni and Flat rivers in general.

HUMAN HISTORY

Prior to the 18th century, the Nahanni region was occupied by Athapaskan speaking Indian tribes (Slavey and Nahanni). It is believed that these native people did not come into contact with Europeans until the late 18th century, when exploration of the Mackenzie River basin was being pursued by the North-West Company. Direct contact with the native people who inhabited the Nahanni area first occurred in 1823 as a result of the efforts of the Hudson's Bay Company. The Hudson's Bay Company operated a fur trade post on the South Nahanni River for one season in 1825. No other trading post was established there until about 1915. Although the fur trade route subsequently bypassed the South Nahanni River, bands in the Nahanni area continued to be involved in the fur trade; they traded at Forts Liard and Simpson and at Forts Norman and Wrigley. Anglican and Roman Catholic missionaries first arrived in this region in the late 1850's. By the close of the 19th century, the South Nahanni watershed was still largely unknown.

PARK DEVELOPMENT

In accordance with the wilderness nature of the Flat and South Nahanni rivers, development of visitor facilities within this park reserve has been limited. Primitive campgrounds have been established at Rabbitkettle Lake, Virginia Falls, Marengo Creek, Big Bend, Deadman Valley and Kraus Hot Springs. Overnight visitors to Virginia Falls are required to camp at the primitive campground established there. Visitors are, however, required to use the other primitive

campgrounds established in Nahanni; they may find their own campsites along the river corridor.

An outfitter's group camping area at Dry Canyon Creek in Deadman Valley and one near the confluence of the Flat River have also been established.

Warden cabins have been built at Rabbitkettle Lake, Sunblood Mountain, the Flat River confluence and in Deadman Valley.

Ca: bulletin d'actualisation
voir document disponible en
français

Published under the authority of the
Hon. John Roberts, Minister of the Environment
Ottawa, 1982.

Canada